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ABSTRACT

According to recent studies, occupational sexism is as common today as it was at the turn of the century. A major cause may be long-standing stereotypes of role expectation, which teach students that many economic and social roles are differentiated by gender alone. In order to determine those factors most influential in career decision-making, a questionnaire was administered to 1470 students at 16 Illinois community colleges. Of the respondents, 58.9% were from urban or suburban areas and 42.1% from a rural area or small town: 53.4% were under 21 years of age: 65.6% had been in the upper half of their high school class: and 79.7% were White. Of the technical majors, 59.7% were Males and 78.6% were White. The majority of the respondents had acquaintances in their chosen career field, and high percentages of the White and Male sub-groups had role models of their sex and race. When asked to classify occupations as male/female or white/minority, respondents tended to classify few occupations along racial lines, but many according to sex. When asked to rank order persons having the most influence on their career choice, the total population and most of the sub-groups ranked Parents as the most influential, followed by Friends/Classmates, Teachers, Counselors, and Siblings. As expected, Whites and Males preferred vocational courses to a greater extent than Females and Non-whites. The implications of these findings for community colleges are discussed. (AYC)

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Factors Influencing Choice of Technical Careers by Women and Minorities

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Factors Influencing Choice of Technical Careers by Women and Minorities

Recent years have produced increasing enrollments of women and minorities in colleges and universities. However, there has been no significant increase of these persons in the areas of science and technology (Vetter, 1975). Subsequently, the rate of occupational segregation by sex is as great today as it was at the turn of the century, according to recent results of three-year studies of institutional sexism and racism released by the non-profit Council on Interracial Books for Children sponsored by the Carnegie Corporation (1979), a non-profit educational foundation. A major causal factor in this situation may be long-standing stereotype of role expectation. In reviewing the work world, it was noted that there is an increase in demand for technically skilled employees as well as increasing salaries in these fields. Minorities and women, however, have not been entering these fields as evidenced by both enrollment in training programs and employment statistics.

One of the legal and moral challenges facing vocational educators at the present time is the necessity to provide sex equity in their educational programs. Existing attitudes inhibit the progress of female and minority students in making career choices. Many such students are not aware of the existence of sex bias and stereotyping and their relationships to careers and lives of females/minorities. By interacting with the educational movement, students learn attitudes, knowledge, and skills necessary for assuming a functioning position in society. Sex-role stereotyping and socialization teach students that many economic, social, and pyschological roles are differentiated by gender alone. The problem is that stereotyping, especially that of sex-role, often blocks human understanding, communication, and potential. Sex-role stereotyping is deeply rooted in our culture and affects career, educational, and occupational choices of women. In a study of career awareness programs in the elementary

schools conducted by the National Institute of Education research report (1977), Leifer and Lesser concluded that occupational roles that elementary school students recognize are limited by stereotypical ideas about race and sex. When asked what they would like to do when they grow up, boys usually chose two or three times as many different occupations as girls. Nearly two-thirds of the girls responded "nurse" or "teacher."

Roles that women in the labor force have had reflect that "women's jobs" have usually required less skill, provided less opportunity for advancement, and offered lower wages than men who were paid for doing the same work. The Scientific Manpower Commission (analyzing U.S. Labor Department statistics as recently as 1976) found that except for beginning engineers and industrial chemists, "women's salaries are lower than those of men with comparable training and experience at every age, every degree level, in every field and with every type of employer." White men who dropped out of high school earned an average of $2,200 more than women with college degrees. Annual income for men and women by race showed that White Males were followed by Spanish Origin Males, Black Males, White Females, Black Females and Spanish Origin Females (National Commission in Working Women, 1978).

Perhaps the most attractive field for female college graduates today is engineering, where about 99 percent of active employees are male. As late as 1976, just one in 40 engineering graduates was a woman. So a woman engineering graduate today can expect to be courted by the top companies.

At the present time, there are 42.1 million women in the work force, and 41 percent of those have preschool children. Fifty-seven percent of women workers in 1975 had husbands whose incomes were below $7,000. While women have the same innate abilities and interests as men, the Bureau of Census list of 250 distinct occupations indicates half of all women workers are crowded into only 21 or the 250 occupations, with a heavy emphasis on clerical

(Fader, 1977). A June, 1978, Census Classification study reported that majorities of working women are found in only 20 of the 441 occupations listed. In March 1978, nearly 80 percent of the working women were in Clerical, Sales, Service, Factory or Plant Jobs, according to the National Commission on Working Women. (1978).

Theoretical Framework

Salient among the concepts commonly espoused by the major theorists in vocational development (Ginzburg, Holland, Rowe, Super, et al.) are those which address the orderly and irreversible process essential to sound career choice. Early experience, self-concept, values and role stereotype, according to those theorists, are major influences in meeting the demands of the various developmental stages in order to bring about succesful passage to the next stage. Such successful passage, then, will be altered and career direction changed if any of those factors are distored or omitted as a result of societally imposed limitations. The hypotheses being tested in this study are based on the premise that women and minorities are forced to follow a process in which society has imposed expectations on them that channel them into categories of careers which have come to be viewed as traditional for this vital segment of our population.

Procedures

During the summer of 1978, the researchers developed a questionnaire to identify those factors most influential in the career decision-making process as perceived by community college students enrolled in both technical and non-technical programs. This questionnaire was piloted with 120 students from John A. Logan College, Carterville, and State Community College, East St. Louis. Based on the responses of this population, the items on the questionnaire were revised slightly and the instrument was adapted so as to

be used with computerized scoring sheets.

Following acceptance for funding, by the Illinois Office of Education, Division of Adult Vocational-Technical Education, the study was expanded to include community college students representative of the diverse demography of the State of Illinois. Sixteen community colleges located throughout the State of Illinois expressed their willingness to participate in the study. Appendix A lists the schools and shows their respective geographic locations. At each school, an individual was designated by the president to be responsible for the receipt of the questionnaires, the administration of the instrument, and the collection and return of the answer sheets. In addition, these individuals were responsible for selection of participants within the broad limitations of the study, i.e., students enrolled in both technical and non-technical programs, and representative samples of all races, male and female.

Description of the Population

Table 1 shows the type of community which formed the background of the subjects in the study. The breakdown is representative of the State of Illinois and was consistent when the total population was broken into subgroups by sex, race, and program of study (technical and non-technical).

TABLE 1

TYPE OF COMMUNITY

Community	No.	%
Large City	358	24.2
Medium City	298	21.0
Suburban	203	13.7
Rural	235	15.9
Smalltown	388	26.2

Table 2 shows the age range of the subjects. Again, the range remained constant when the population was divided into subgroups by sex, race, and program of study.

TABLE 2

AGE

Age	No.	%
17	4	0.4
18	132	14.4
19	236	25.8
20	126	13.8
21	69	7.5
22	30	3.3
23	30	3.3
24	26	2.8
25	19	2.1
26	32	3.5
27	27	3.0
28	10	1.0
29	17	1.9
30-39	109	12.1
40-49	28	3.0
50-59	16	3.0
60-69	4	0.4

When asked to report high school class rank, the subjects responded as shown in Table 3. The responses indicated that the majority of the students attending community colleges were in the upper half of their graduating classes. This was also true when the population was divided according to sex, race, and program of study.

TABLE 3

RANK IN HIGH SCHOOL CLASS

Rank	No.	%
Upper 25%	523	35.5
Second 25%	444	30.1
Third 25%	182	12.3
Lower 25%	33	2.2

The racial composition of the population is typical of that of the entire nation as shown in Table 4.

TABLE 4

RACE

Race	No.	%
White	1180	79.7
Black	177	12.0
American Indian	17	1.1
Spanish surnamed	39	2.6
Other	67	4.5

Tables 5, 6, and 7 show the composition of the subgroups formed by combining the independent variables of sex, race and program. The composition of the subgroups is consistent with the composition of the total population of this study.

TABLE 5

SEX/PROGRAM

Program	Male No. (%)	Female No. (%)	Total No. (%)
Technical	390 (59.7)	263 (40.3)	653 (100.0)
Non-Technical	326 (37.8)	494 (60.2)	820 (100.0)

Table 6

RACE/PROGRAM

Program	White	Non-White	Total
Technical	511 (78.6)	139 (21.4)	650 (100.0)
Non-Technical	661 (80.9)	156 (19.2)	8.7 (100.0)

TABLE 7

SEX/RACE

Race	Male	Female	Total
White	580 (49.2)	600 (50.8)	1180 (100.0)
Non-White	139 (46.3)	161 (53.7)	290 (100.0)

In general, the population of the study is sufficiently large and, in terms of the independent variables considered above, sufficiently representative of the State of Illinois to allow inferences to be drawn concerning the entire community college population of the state. The population differs significantly,

however, from that in the work world where women and minorities do not occur in such high proportions.

Findings

The study continues to yield an abundance of valuable data which the researchers are continuing to analyze with various statistical methods. For the purpose of this presentation, a few items especially significant to those concerned with community colleges and two-year programs are addressed.

The issues of role model and stereotyping are of great interest and concern because so few women and minorities are represented among workers in the technical fields. In response to items concerning personal acquaintances trained and/or working in the career field of choice, the subjects reported as shown in Table 8.

TABLE 8

PERSONAL ACQUAINTANCES IN CHOSEN CAREER FIELD

Response	Women (%)	Men (%)	White (%)	Non-White (%)
Yes	76.2	75.0	78.0	65.5
No	23.8	25.0	22.0	34.5

It is notable that in the subgroups based on sex and race, the majority of subjects do indeed have personal acquaintances with Non-Whites reporting the lowest positive response level (65.5%).

Of those responding positively, Table 9 shows the percentage with acquaintances of the same sex and race as the subjects.

TABLE 9

ACQUAINTANCES OF SAME SEX AND RACE IN CHOSEN CAREER FIELD

Response	Women (%)	Men (%)	White (%)	Non-White (%)
Yes	33.3	16.9	25.0	25.7
No	66.7	83.1	75.0	74.3

It is notable that Men and Whites reported high percentages for role models in this category (81.9% and 78.1% respectively) followed closely by women (62.0%). Non-whites, on the other hand, indicated that less than half (45.5%) have role models in their chosen career fields who are of the same sex and race as themselves.

Table 10 shows a further breakdown of role models by reporting those of the same race but different sex than the subjects. Among Men and Whites the percentages are low since for these groups, role models of same sex and race are at such high levels. Among Women, the prior response of 62.0%, of same sex and race, coupled with 33.3% of same race, different sex, indicates that Women are likely, in the absence of female role models, to change to male role models of the same race when choosing a career field. Non-whites, on the other hand, reported such low levels of role models of same sex and race, that they have been crossing these lines and following careers in which they have no role models. This may be interpreted as positive movement as they enter careers and, furthermore, a step toward correcting the inequity currently in practice.

TABLE 10

ACQUAINTANCE OF SAME SEX AND DIFFERENT RACE

IN CHOSEN CAREER FIELD

Response	Women (%)	Men (%)	White (%)	Non-White (%)
Yes	33.3	16.9	25.0	25.7
No	66.7	83.1	75.0	74.3

In related sections of the questionnaire, the subjects were given a list of abilities and technical occupations and asked to classify them as male, female, or both equally, and white, minority, or both equally. The response patterns showed that few items were classified along racial lines but many were classified according to sex, and at levels of high significance using

chi-square. In reality, bias and stereotyping may exist, but, when asked to report it, respondents seem to have been sensitized to racial bias to a higher degree than to bias based on sex.

Since educators, at all levels, address the issues of career information and development, the researchers included in the questionnaire an item in which the subjects were asked to rank order persons they perceived as having influence on their choice of career. For the total population, as well as the White, Male, Female, Technical and Non-technical subgroups, Parents, Friends/Classmates, and Teacher ranked first, second, and third respectively, with Counselors and Siblings in the last two places. Among Non-Whites, Parents were again ranked first, followed by Siblings in second place and Friends/Classmates in third. School personnel, Teachers and Counselors, ranked fourth and fifth. It is interesting to note the strong familial influence for Non-Whites along with the low level of influence of school-related personnel.

The subjects were also asked to rank their high school subjects (Language Arts, Math, Science, Social Studies, Vocational-Technical) in order of preference. Particular attention was given to views of vocational-technical and related courses, since in another item the subjects reported that they, rather than others, determined their choice of subjects for each school year. As expected, Whites and Males ranked Vocational-Technical courses more highly than Females and Non-Whites. Females ranked Vocational-Technical and Science as their fourth and fifth choices, respectively, while Non-Whites reversed the order of the two as their least favorite. As expected, Technical students ranked Vocational-Technical as first and Non-technical students rated them as last. If students do indeed select their own courses, their preferences are continually reinforced, making changes in course choice and career difficult.

Conclusions

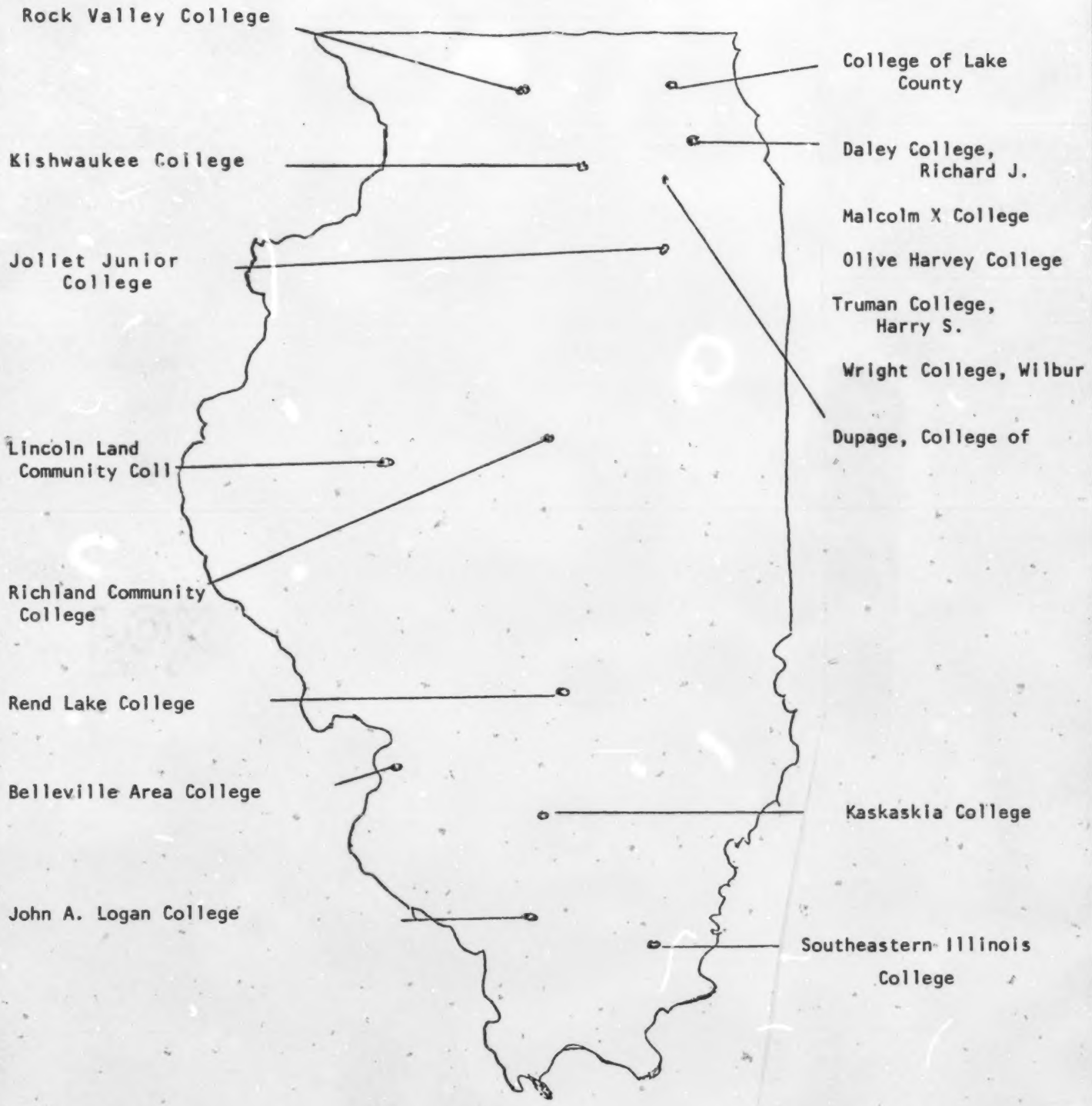
The data and analysis have clear implications for community colleges. In

staffing patterns, efforts should be made to include competent women and minorities in order to broaden role models available to students. This should be done in technical programs as well as others so that all options are clearly available.

Information dissemination and recruiting efforts should be geared to not only the prospective student but parents, whose perceptions are clearly influential. Ideally, this effort will have been initiated by the schools much earlier.

Additionally, community colleges should expand their efforts to expose students to a broad range of careers and courses. Students who have developed a dislike for technically-related courses very early in their school years may need to be re-introduced to such areas.

Hopefully, such efforts will serve to broaden the perspectives of students attending community colleges to include career options not previously considered, and furthermore, perhaps reach formerly non-traditional studnets who may discover new careers.



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